

Maxime NICAISE

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Education

MSc in Mathematical Engineering - CentraleSupélec, Université Paris-Saclay Sep. 2023 – Aug. 2027
4 years

CentraleSupélec, Paris, France

- French Grande École, admitted after national competitive examination. Currently on a Gap Year (2025–2026) for research and industry internships.
- Machine Learning, Optimization, Measure Theory, Probability, Statistics, Functional Analysis, Partial Differential Equations, Control Theory, Signal Processing, Algorithmics.

Preparatory Classes to Grandes Écoles - Lycée international de Valbonne Sep. 2021 – Jul. 2023
2 years

Lycée International de Valbonne, Valbonne, France

- Intensive undergraduate training program in mathematics, computer science, and physics for the national competitive entrance exams to French engineering grandes écoles.

Research Experience

Research Internship in Optimal Transport Sep. 2025 – Feb. 2026
6 months

INRIA, Sophia-Antipolis, France

- Supervised by Dr. Samir Perlaza.
- Established theoretical equivalence between f -divergence-regularization schemes for optimal transport. Results accepted at *IEEE ISIT 2026* and extended into a journal submission to *Information and Inference: A Journal of the IMA* (conference preprint: [arXiv:2604.12996](https://arxiv.org/abs/2604.12996) and research report: [hal-05454647](https://hal.archives-ouvertes.fr/hal-05454647)).
- Designed and implemented a stabilized Sinkhorn-type algorithm for semi-relaxed regularized optimal transport. Established strong theoretical convergence guarantees with explicit linear rates, supported by experimental results (research report: [hal-05635975](https://hal.archives-ouvertes.fr/hal-05635975) and code: [GitHub](https://github.com)).
- Served as a reviewer for *IEEE ISIT 2026* conference via EDAS.

Research Project in Functional Analysis & PDEs Jan. 2024 – Jun. 2025
18 months

CentraleSupélec, Paris, France

- Supervised by Prof. Anna Rozanova-Pierrat.
- Studied topics in functional analysis and partial differential equations, focusing on the extension of classical results to domains with weaker regularity assumptions.

Teaching Experience

Mathematics Teaching Assistant Sep. 2024 – Feb. 2025
7 months

CentraleSupélec, Paris, France

- Designing and conducting weekly 2-hour reinforcement tutorials in probability and partial differential equations for third-year undergraduate students at CentraleSupélec.

Mathematics Oral Examiner (Colleur) - CPGE Sep. 2025 – Feb. 2026
6 months

Lycée International de Valbonne, Valbonne, France

- Mathematics oral examiner for classes préparatoires MPI/MPI* and PC, conducting weekly oral examinations and providing feedback on problem-solving and mathematical reasoning.

Applied / Industry Experience

Data Science & ML Internship Feb. 2026 – Aug. 2026
6 months

Hypertrade, Bangkok, Thailand

- Investigated retail sales forecasting and prepared an LLM-based analytics agent integrating database queries and predictive ML models on real-world client data.

Skills

Programming: Python (PyTorch, NumPy, Pandas, SciPy, POT, scikit-learn, LightGBM, statsmodels), OCaml, R, C, \LaTeX , MATLAB, SQL.

Languages: French (native), English (proficient), Spanish (intermediate), Thai (Conversational).